

In re Patent Application of
BAHLENBERG ET AL.
Serial No. 09/529,429
Filed: OCTOBER 30, 2000

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REMARKS

Applicants again thank the Examiner for the careful and thorough examination of the present application, and for correctly withdrawing the previous rejection in view of Applicants arguments presented in the July 20, 2004 Reply. Claims 27-54 remain pending in the application. Fig. 1 has been revised to clarify the distinction between the two lengths of lines, L is greater than or equal to X, and L is less than X.

Favorable reconsideration is respectfully requested.

I. The Invention

As shown in FIG. 1 and described in the present specification, the disclosed invention is directed a telecommunications system including a central station and subscriber lines of different lengths. The subscriber lines are grouped into longer and shorter lines, shorter lines are defined as lines having a length less than X, and longer lines are defined as lines having a length equal to or greater than X, where X is a system parameter determined for a given telecommunications system. The system also includes a plurality of data modems connected to the central station by the subscriber lines of different lengths with duplex data being transmitted between the central station and at least one data modem using very high rate digital subscriber line (VDSL). Frequency divided duplex (FDD) is used at lower frequencies for transmissions over the longer lines and

In re Patent Application of
BAHLENBERG ET AL.
Serial No. 09/529,429
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orthogonal frequency divided duplex (OFDD) is used at higher frequencies for transmissions over the shorter lines.

II. Claims 36 and 52 are Enabled by the Specification

Claims 36 and 52 were rejected under 35 U.S.C. §112, first paragraph, as allegedly being non-enabled by the specification for the reasons presented by the Examiner on pages 5-7 of the Office Action. More specifically, the Examiner alleges that the use of both ADSL and VDSL on the same line would not be expected to actually perform together reliably and effectively because "they are not designed to perform at the same time on a single line."

Applicants refer to page 7 of the specification, for example, for support of the claimed feature of ADSL and VDSL being used on the same line. Furthermore, Applicants point to Chapter 15 of *Internetworking Technology Overview* from June 1999 (attached herewith) for a discussion of the basics of ADSL and VDSL including the understanding that versions of VDSL will incorporate the asymmetric rate of ADSL.

As the Examiner should be aware, any analysis of whether a particular claim is supported by the disclosure in an application requires a determination of whether that disclosure, when filed, contained sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the claimed invention. The mere fact that something has not previously been done clearly is not, in itself, a sufficient basis for

In re Patent Application of
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/

rejecting all applications purporting to disclose how to do it.

To make a rejection, the Examiner has the initial burden to establish a reasonable basis to question the enablement provided for the claimed invention. A specification disclosure which contains a teaching of the manner and process of making and using an invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as being in compliance with the enablement requirement of 35 U.S.C. 112, first paragraph, unless there is a reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support. The Examiner should never make the determination based on personal opinion.

Applicants maintain that the Examiner has failed to present a prima-facie case of non-enablement; and, moreover, the specification adequately supports the claimed features set forth in Claims 36 and 52 as discussed above, as required by 35 U.S.C. 112, first paragraph. Accordingly, the rejection should be withdrawn.

III. The Claims are Definite

Claims 27-54 were rejected as allegedly being indefinite for the reasons set forth on page 7 and 8 of the Office Action. Applicants have amended the claims to eliminate the alleged informalities noted by the Examiner.

Furthermore, Applicants point out that the Examiner's focus during examination of claims for

In re Patent Application of
BAHLENBERG ET AL.
Serial No. 09/529,429
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/

compliance with the requirement for definiteness of 35 U.S.C. §112, second paragraph should be whether the claim meets the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available. Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the Examiner might desire. Examiners should not reject claims or insist on their own preferences if other modes of expression selected by Applicants satisfy the statutory requirement.

As the Examiner is aware, the essential inquiry pertaining to this requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a 'vacuum, but in light of: (A) the content of the particular application disclosure; (B) the teachings of the prior art; and (C) the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. If the scope of the invention sought to be patented can be determined from the language of the claims with a reasonable degree of certainty, a rejection of the claims under 35 U.S.C. §112, second paragraph is not appropriate. Accordingly, Applicants believe that Claims 27-54 meet the statutory requirements of 35 U.S.C. §112, second paragraph.

In re Patent Application of
BAHLENBERG ET AL.
Serial No. 09/529,429
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IV. The Claims are Patentable

Claims 27-35, 37-51, 53 and 54 were rejected over Bingham et al. (U.S. Patent No. 5,680,394) in view of Eames (U.S. Patent No. 6,282,189) taken together or in further combination with Younce (U.S. Patent No. 5,521,908) or Dichter (U.S. Patent No. 5,896,443) for the reasons set forth on pages 9-17 of the Office Action. No references were applied against Claims 36 and 52. Applicants contend that Claims 27-35, 37-51, 53 and 54 clearly define over the cited references, and in view of the following remarks, favorable reconsideration of the rejections under 35 U.S.C. §103 is requested.

Independent Claims 27, 39 and 43 include subscriber lines of different lengths being grouped into longer and shorter lines, with shorter lines being defined as lines having a length less than X, and longer lines being defined as lines having a length equal to or greater than X, where X is a system parameter. The claims include transmitting duplex data between a central station and at least one of a plurality of data modems using DSL or VDSL in a telecommunications system having the plurality of data modems connected to the central station by the subscriber lines of differing lengths. A first duplex format, or Frequency Divided Duplex (FDD), is used at relatively lower frequencies for transmissions over the longer lines, and a second duplex format, or Orthogonal Frequency Divided Duplex (OFDD), is used at relatively higher frequencies for transmissions over the shorter lines. The associated description of such claim features can be found on

In re Patent Application of
BAHLENBERG ET AL.
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pages 7 and 8 of the present specification referring to FIG. 1 of the drawings.

It is this combinations of features which is not fairly taught or suggested in the cited references and which patentably defines over the cited references. And, as discussed, the present invention increases VDSL capacity and reduces capacity loss for OFDD on long lines while avoiding any near-end cross-talk (NEXT) between ADSL and VDSL.

The Bingham et al. patent is directed to a method of coordinating very high speed bi-directional data transmissions between a central unit and a plurality of remote units over distinct twisted pair transmission lines that share a binder. The Eames patent is directed to a Unified Access Platform capable of providing telephone and high speed data services in a number of different local loop configurations. A broadband digital terminal (BDT) receives high speed data and telephony signals, and combines them into a cell based signal which is transported to an access multiplexor.

There is no teaching in either reference alone, or in combination, of subscriber lines being grouped into longer and shorter lines based upon a system parameter, and/or Frequency divided duplex (FDD) being used at lower frequencies for transmissions over the longer lines and orthogonal frequency divided duplex (OFDD) being used at higher frequencies for transmissions over the shorter lines. Instead, the Examiner has mischaracterized the actual teachings of the references and made numerous inherency assertions regarding these references. Indeed, neither reference teaches the use of

In re Patent Application of
BAHLENBERG ET AL.
Serial No. 09/529,429
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more than a one duplexing scheme in a communication system at all.

The Examiner refers to portions of the references that discuss the basics of ADSL, VDSL, FDD and/or OFDD as is well known to the skilled artisan. The Examiner then relies on this common knowledge to arrive at his position that Bingham et al. and Eames together inherently teach grouping lines into two groups based upon a system parameter and that it would then have been obvious to use a first duplex format, or FDD, at lower frequencies for transmissions over the longer lines, and a second duplex format, or OFDD, at higher frequencies for transmissions over the shorter lines, in a system with a plurality of modems, as claimed.

Applicants specifically traverse the Examiner's assertions because: there is no teaching of subscriber lines being grouped into longer and shorter lines based upon a system parameter, and/or FDD being used at lower frequencies for transmissions over the longer lines and OFDD being used at higher frequencies for transmissions over the shorter lines; and the Examiner has not provided a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic, grouping lines into two groups based upon a system parameter, necessarily flows from the teachings of Bingham et al. and Eames.

The other cited references were relied upon for their respective teachings of the use of OFDD and ADSL. However, none of these references makes up for the deficiencies of Bingham et al. and Eames as discussed above.

In re Patent Application of
BAHLENBERG ET AL.
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It should be clear from a reading of the Examiner's stretch to assert obviousness on pages 9-12 of the Office Action, that the Examiner has engaged in impermissible hindsight reasoning in using the teachings of Applicants' own patent application as a roadmap to modify the prior art. Indeed, the Examiner's position is that because ADSL, VDSL, FDD and OFDD are known, that it must have been obvious to use these communication protocols in the exact manner claimed by Applicants.

As the Examiner is aware, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim features. The initial burden is on the Examiner to provide some suggestion of the desirability of doing what the Applicants have done. To support the conclusion that the claimed invention is directed to obvious subject matter, either the reference must expressly or impliedly suggest the claimed invention or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the reference. Both the suggestion to make the claimed combination and the reasonable expectation of success must be founded in the prior art and not in Applicants' disclosure.

In re Patent Application of
BAHLENBERG ET AL.
Serial No. 09/529,429
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There is simply no teaching or suggestion in the cited references to provide the combination of features as claimed. Accordingly, for at least the reasons given above, Applicants maintain that the cited references do not disclose or fairly suggest the invention as set forth in Claims 27, 39 and 43. Furthermore, no proper modification of the teachings of these references could result in the invention as claimed. Thus, the rejection under 35 U.S.C. § 103 should be withdrawn.

It is submitted that the independent claims are patentable over the prior art. In view of the patentability of the independent claims, it is submitted that their dependent claims, which recite yet further distinguishing features are also patentable over the cited references for at least the reasons set forth above. Accordingly, these dependent claims require no further discussion herein.

V. Conclusion

In view of the foregoing remarks, it is respectfully submitted that the present application is in condition for allowance. An early notice thereof is earnestly solicited. If, after reviewing this Response, there are any remaining informalities which need to be resolved before the application can be passed to issue, the Examiner is invited and

In re Patent Application of
BAHLENBERG ET AL.
Serial No. 09/529,429
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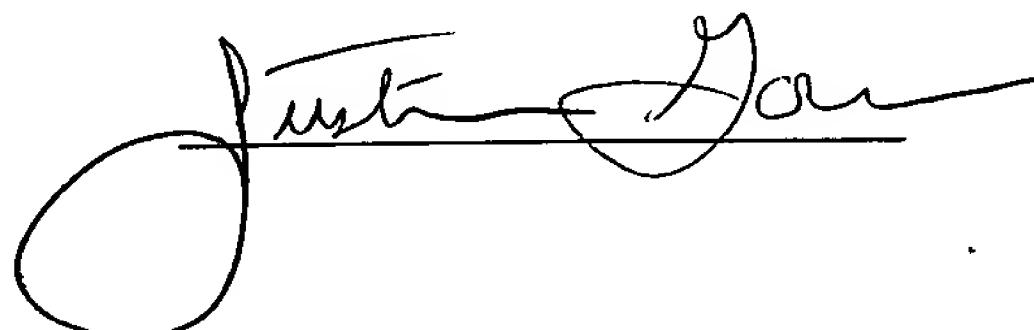
respectfully requested to contact the undersigned by telephone
to resolve such informalities.

Respectfully submitted,


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Amendments to the Drawings:

The attached sheet of drawings includes changes to Fig. 1. Specifically, Fig. 1 has been revised to clarify the distinction between the two lengths of lines, L is greater than or equal to X ($L \geq X$), and L is less than X ($L < X$).

Attachment: Replacement Sheets